The Trauma Professional's Blog

Trauma MedEd #59

Topic: The Laws of Trauma Subscribe: www.TraumaMedEd.com August 2017

Time for some more philosophy! After doing anything for an extended period of time (35 years in my case, to be exact), one begins to see the common threads and underlying principles of their area of expertise. I've been trying to crystallize these for years, and I've devoted this newsletter to a series of laws that I've observed.

Feel free to email, tweet, or comment with your own observations!

The First Law Of Trauma

"Any anomaly in your trauma patient is due to trauma, no matter how unlikely it may seem."

Some examples:

- An elderly patient who crashes his car and presents with arrhythmias and chest pain is not having a heart attack. Nor does he need a cardiologist or a trip to the cath lab.
- A spot in the liver after blunt trauma is not a cyst or hemangioma; it is a laceration until proven otherwise.
- A patient found at the bottom of a flight of stairs with blood in their head did not have a stroke and then fall down.

Bottom line: The possibility of trauma always comes first! It is your job to rule it out. Only consider non-traumatic problems as a last resort. Don't let your non-trauma colleagues try to steer you down the wrong path, only to have your patient suffer.

The Second Law Of Trauma

There are two broad categories of things that kill trauma patients. No, I'm not talking about violent penetrating injury, falls, car crashes, or any other specific mechanisms. I am referring to the end events (on a macro scale) that take their lives.

These two basic killers are: **hemorrhage** and **brain injury.** The vast majority of the time, a dying trauma patient has either suffered a catastrophic brain injury, or has ongoing and uncontrolled bleeding.

Here's the law:

"Your trauma patient is bleeding to death until you prove otherwise. "

Bottom line: Since there is little we can do above and beyond the basics in the ED for severe brain injury, your focus must be on hemorrhage. There are lots of things we can do about that, and the majority involve an operating room. Always assume that there is a source of hemorrhage somewhere, and it just hasn't shown itself yet. There can be no rest until you prove that the source *does not* exist. And hopefully, you do that very, very quickly.

The Third Law Of Trauma

Trauma patients don't always behave the way we would like. They continually surprise us, sometimes for the better when they recover more quickly and completely than we thought. But sometimes it's for the worse. They occasionally crash when we think everything is going so well.

Trauma Calendar of Events

American Association for the Surgery of Trauma
Location: Marriott Waterfront, Baltimore, Maryland
September 13-16, 2017

American College of Surgeons Clinical Congress
Location: Numerous hotels, San Diego, California
October 22-26, 2017

The crashing patient is in obvious need of help and most trauma professionals know what to do. But then there's the hypotensive patient. The BP just dropped to 84, and it's not budging. Many don't see this for what it is: *a slow motion crash*. And they want to do things they wouldn't think of doing to a crashing patient. Like go to CT, do some more stuff in the ED because that BP cuff just *has* to be wrong, or call interventional radiology and wait for 45 minutes.

But here's the law:

"The only place an unstable trauma patient can go is to the OR."

Bottom line: By definition, an unstable trauma patient is bleeding to death until proven otherwise (the second law, remember?). Radiation can't fix that. Neither can playing around in the resuscitation room, unless the bleeding is spraying you in the face. The *surgeon* needs to quickly figure out which body cavity is the culprit, and address it immediately. And the only place with the proper tools to do that is an operating room.

The Fourth Law Of Trauma

You've just received a young male who had been stabbed under his right arm in your emergency department. He's awake, talking, and very friendly. He met your trauma activation criteria, so you are cruising through the full evaluation. Lines in, blood drawn, clothes off. He wonders aloud if all this is really necessary.

Then, on FAST exam, you see it. A pericardial stripe that looks like a mix of liquid and clotted blood. Your colleague steps in and verifies the exam. But vital signs are normal, *the patient is fine.*

What next? CT of the chest to further define this? A formal echo to confirm? Your surgeon says no, we're going to the OR, now! Reluctantly, you package the patient and send him on his way. In the OR, the anesthesiologist takes his time, putting in an arterial line, asking the patient unrelated questions. A thoracotomy? Really? The patient remains awake and alert through all of this.

So here's the fourth law:

"Even awake, alert, and stable patients die. And it hurts that much more when they do."

Bottom line: You know the diagnosis in this case. And you know what needs to be done. But the awake and alert patient fools us. Fakes us out. Somehow, we equate the ability to talk intelligently with being fine. But evil things can be going on inside that don't rear their ugly head until it's too late. Don't get suckered! Believe your exam, not what the patient thinks they are telling you.

The Fifth Law Of Trauma - Pediatric

I knew there was a fifth law! Any time I give a pediatric talk, I mention it. This one applies to anyone who takes care of children, and is particularly important to EMS / prehospital providers and emergency physicians.

On occasion, medics are called to a home to treat a child in extremis, or occasionally in arrest. Similarly, extremely sick children are often brought to the ED by parents or other caregivers.

Here's the fifth law:

"A previously healthy child who is in arrest, or nearly so, is a victim of child abuse until proven otherwise."

Bottom line: It's so easy to go down the sepsis path with sick kids, especially those who can't talk yet. But healthy children tend to stay healthy, and don't easily get sick to the point of physiologic collapse. If you encounter one as a prehospital provider, glance around at the environment, and evaluate the caregivers. In the ED, ask pointed questions about the circumstances and do a full body examination. What you hear and what you see may drastically alter how you evaluate the patient and may save their life.

The Sixth Law Of Trauma

Here's another one. I've seen the clinical problems and poor outcomes that can arise from ignoring it many times over the years.

You've ordered a CT or a conventional x-ray image. The

result comes back in your EMR. You take a quick glance at the summary at the bottom of the report. No abnormal findings are listed. So now, in your own mind and in any sign-outs that you provide, the image is normal.

Here's the rub. ***Saying something is not abnormal doesn't necessarily mean that it's normal.*** Hence the sixth law:

"Always look at the image yourself."

Sometimes, the radiologist misses key findings on the image. Sometimes they see them and make a note of them in the body of the report. But they don't get the clinical significance and don't mention it in the summary (which is the only thing you looked at, remember?).

Bottom line: Always make a point to pull up the actual images and take a look. You have the full clinical picture, so you may appreciate findings that the radiologist may not. Sure, you may not have much experience or skill reading more sophisticated studies, but how do you think you develop that? Read it yourself!

The Seventh Law Of Trauma

"Your patient is at their healthiest as they roll in through the emergency department door"

Yes, major trauma patients are sick, but they are going to get sicker over the next few hours to days. No matter how bad they look now, they will tolerate more at the time you first see them than they will tomorrow.

Too often, we look at them and delay because "they are too sick to operate." This is usually not the case.

Bottom line: Move quickly, get surgical clearances done promptly, and perform all interventions (especially major surgery) early before your trauma patient gets really sick!

The Eighth Law Of Trauma

All trauma professionals need to keep up with the current thinking in their field. There are a variety of ways to do this, including lectures, courses, online curricula, meetings, and reading journal articles.

The last method requires a bit of skill and patience. Many research papers are dry, long, and hard to read. Quite a few people do not have the patience to wade through them, and get lost in all the details. The natural tendency is to just read the abstract. It's quick, easy, and the conclusion is right there, right?

"Read the entire paper!"

Bottom line: Yes, it takes practice. But you will find that it gets easier over time. And you will be surprised at how many times the abstract actually says the opposite of what was outlined in the body of the paper.

The Ninth Law Of Trauma

Okay, here's the last one! But this one is a doozy. It's the most important one I live by. It ensures that you don't get bogged down by habit, custom, dogma, ignorance, or just plain laziness.

"Question everything!"

If someone ever says, "but that's the way I/we always do it," or "that's what the policy says," or even "I read a good paper/chapter on this," **take it with a really big grain of salt. Or a salt lick** (if you know what that is; look it up).

Bottom line: It's up to you to decide what is right for your patients. Others may not have done the legwork and may not be as knowledgeable as you think. Always check the facts!

Bonus: McSwain's Rules Of Patient Care

The next page is a reprint of Norm McSwain's rules of patient care. Norm was a legendary trauma surgeon who spent the bulk of his career in New Orleans at Charity Hospital. His rules were borne upon his experience in a very busy clinical setting.

Unfortunately, Dr. McSwain passed away two years ago. But his rules are timeless and will live on in my practice. I highly recommend you read and assimilate them into yours!

McSwain's Rules of Patient Care

1. *Death is your adversary and competitor — fight to win.*
2. *Treat the patient as if they were your mother, father or child.*
3. *Each minute has only 60 seconds. Do not waste any of them.*
4. *Assume nothing, trust no one, do it yourself.*
5. *Know anatomy cold.*
6. *Be technically quick.*
7. *Do not panic in the face of blood.*
8. *Work with physiology, not against it*
9. *Maintain energy production.*
10. *Know what to fix and what to leave alone.*
11. *Know when to run.*
12. *Paranoia prevents disasters.*
    a. *The patient's disease is out to embarrass you.*
    b. *The patient does not tell you the whole truth.*
    c. *The most severe injury is under the unremoved clothes.*
    d. *The infection is hidden by the dressing.*
    e. *The patient has a problem that you do not know about.*
13. *Never talk a patient into or out of any operation.*
14. *The nurses' notes do not say what the nurse told you.*
15. *Do not procrastinate. Make a decision and carry it out.*
16. *Learn from your successes and from your failures.*
17. *Always question everything you do.*
18. *Don't whine, just get the job done.*

Norman McSwain, MD, FACS